IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS AUSTIN DIVISION

ZOHO CORPORATION
 	
    Plaintiff,
 	
    v.
 	
LIBERTY PEAK VENTURES, LLC,
 	
    Defendants.
	CASE NO. 1:22-cv-00037-LY
	
	JURY DEMANDED

LIBERTY PEAK VENTURES, LLC,
 	
    Counterclaimant,
 	
    v.
 	
ZOHO CORPORATION
 	
    Counter-Defendant,
 	
and
 	
ZOHO CORPORATION PVT. LTD
 	
    Third-Party Defendant.	

EXPERT DECLARATION OF

Dr. José Luis Meléndez

REGARDING CLAIM CONSTRUCTION

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This declaration is submitted pursuant to Rule 26(a)(2) of the Federal Rules of Civil Procedure.

I.   INTRODUCTION

A.   Asserted Patents

1.   I understand that Liberty Peak Ventures, LLC ("LPV" herein) has asserted that Zoho Corporation and Zoho Corporation PVT. LTD ("Zoho") infringe the following U.S. Patent Nos.: 9,373,122 ("'122 Patent" or "'122"); 10,074,088 ("'088 Patent" or "'088"); and 10,956,901 ("'901 Patent" or "'901") and collectively the "Asserted Patents".

B.   Retention

2.   In connection with *Zoho Corporation v. Liberty Peak Ventures, LLC,* Civil Action No. WDTX-1:22-cv-00037-LY (the "Case"), I have been retained by counsel for LPV to provide expert analysis and offer my opinions regarding the subject patents, aspects related to the Case, and the meaning of claim terms as would be understood by a person of ordinary skill in the art (POSITA). The purpose of this declaration is to set forth my opinions regarding these issues. I submit this declaration as part of my preparation to provide testimony at the claim construction hearing in the Case if called upon to do so.

3.   My company is paid for my work in the Case in the amount of $500 per hour. The compensation is not dependent upon the outcome of the Case. LPV may also reimburse my company for travel and other expenses incurred in the course of my work on this Case. Neither my company nor myself have any personal interest in the outcome of the Case.

4.   My qualifications for opining as documented in this Declaration are summarized in my Curriculum Vitae (or "CV"), which is included with this declaration, and include my education, training, and experience of over 35 years. My CV also includes a list of my patents and

publications. The opinions I express in this Declaration are based on my own personal knowledge and professional judgment. If called as a witness in the Case, I am prepared to testify competently about my opinions. I am also qualified to provide a tutorial on the relevant technologies associated with the LPV Patents including topics such as hardware and software, as well as an explanation of the general nature of internet security and browsers.

C.   Qualifications

   1.   Background and Experience

5.   I was born in and am a citizen of the United States. I reside in Mayaguez, Puerto Rico. I have a Bachelor of Science in Electrical Engineering from the Massachusetts Institute of Technology (awarded June 4, 1990) and graduated with a Grade Point Average of 5.0/5.0. I also obtained a Master of Science in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology (awarded February 20, 1991) with a Grade Point Average of 4.8/5.0. I also hold a Doctor of Philosophy in Electrical Engineering from Stanford University (awarded January 6, 1994) with a Grade Point Average of 4.0/4.0.

6.   Amongst other topics, my doctoral thesis involved the definition, solution and validation of a stiffly coupled differential equation model for the formation of semiconductor devices useful in high performance military systems. Amongst other accomplishments, for my doctoral thesis I developed novel algorithms for the solution of complex equations and implemented those algorithms in computer code.

7.   I am co-inventor of patented technology related to the formation and maintenance of secure, high data rate wireless data links. Devices exhibiting 100 Mb/sec data rates utilizing the high data rate optical wireless technology were demonstrated publicly in 2001.

8.   While at Texas Instruments I managed the wireless infrastructure business that

designed, tested, and marketed semiconductor components together with corresponding software including systems level communications interfaces for secure transmissions within infrastructure applications such as cellular base stations and wireless networks. The business group I managed designed, developed and sold some of the very first products tested in emerging (at the time) generations of cellular systems first capable of transmitting high speed, high quality images as data by way of secure digital transmissions (Multimedia Messaging Service – MMS) over mobile networks.

9.   In 2002 I founded Commoca, Inc. ("Commoca"). Commoca developed hardware, embedded software (or "firmware"), and network services for the deployment of converged voice and data services over wired and wireless communications networks. My company received grants from the National Science Foundation to develop the state-of-the-art Transactional Applications Delivery System (TADS) over the internet. Commoca developed and manufactured feature rich smartphones having apps with convenient content/media services, and local search solutions tailored for a specific location. Commoca smartphone devices utilized IEEE 802.11 ("WiFi" or "Wi-Fi") technology to connect touch screen telephones to access points and were believed to have been amongst the first of such devices to do so. Smartphones provided by Commoca were field tested by BellSouth Corporation (now AT&T) at consumer locations in Florida and Georgia in 2006.

10.   In 2009, while working as a research consultant for the University of Texas Southwestern Medical in Dallas (UTSW), I founded Spectral MD together with UTSW as a university spinoff company to develop specialized wound imaging systems (*e.g.*, US 8,838,211) that generate wound healing assessments and secure (*e.g.*, HIPAA) patient data. In early 2013, following successful clinical studies, the resulting system was cleared by the US Food & Drug

Administration for use in the United States. The company is presently listed as part of the London Stock Exchange.

11.   My work at the University of Puerto Rico in Mayaguez, where I reside, has included serving as Professor of Computer Science and Engineering, as well as three years as Special Assistant to the Chancellor. My courses and research work have included topics related to intelligent networks, artificial thinking, decision making, and e-commerce.

12.   As highlighted above, my professional experience and knowledge areas include networked transactional computing systems, internet communication devices, and related software, as are relevant to the subject matter of this Declaration. Other areas where I have expertise are also noted in my CV.

D.   Information Considered in Forming Opinion

13.   In forming my opinions in this Case, I have considered the Asserted Patents including the prosecution histories of the Asserted Patents before the United States Patent & Trademark Office. I have also considered the Joint Claim Construction Statement filed January 13, 2023 for the Case ("JCCS" herein) that includes Agreed Constructions (*See* JCCS – Doc 32-1) and the opening briefs and exhibits for both Zoho and LPV.

14.   I currently hold the opinions set forth in this Declaration. As my study of the Case continues, I may acquire additional information and/or attain supplemental insights that result in added observations. I reserve the right to supplement this Declaration and to rely on additional documents and testimony that come to my attention between now and the time of my testimony. I also reserve the right to supplement my Declaration based on any supplemental review of any additional documents. I also reserve the right to consider other evidence including declarations or expert reports submitted in this litigation. Nevertheless, I believe the evidence cited to date

provides support for the opinions expressed in this Declaration.

II.   LEGAL BASIS FOR OPINION

A.   Principles of U.S. Patent Law

15.   I understand that it is a basic principle of patent law that the determination of whether a patent claim is infringed or invalid requires a two-step analysis. In the first step, the claim language must be properly construed to determine its scope and meaning.

B.   Claim Construction

16.   I note that the parties in the Case have previously agreed to constructions regarding certain claims of the Asserted Patents (*See* JCCS – Doc 32-1).

17.   I am not a legal expert and I am not offering an opinion on the state of the law with respect to claim construction. My opinion is based in part of my understanding of the legal analysis of claim construction includes the following.

18.   Claim construction is the first step in any infringement or validity analysis. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995), *aff 'd*, 517 U.S. 370 (1996). A district court should construe the claims in light of their explicit language as informed by their preambles, as well as the patent's specification, figures, and prosecution history. *See id.* at 980; *see also Graham v. John Deere Co.*, 383 U.S. 1, 33 (1966).

19.   The specification is the "best source for understanding a technical term," to be supplemented, "as needed, by the prosecution history." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (quoting *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1478 (Fed. Cir. 1998)). The prosecution history represents key evidence of how the examiner and the inventor construed the patent. *See Lemelson v. Gen. Mills, Inc.*, 968 F.2d 1202, 1206 (Fed. Cir. 1992). Claims should generally be interpreted in a manner consistent with other claims, as well as

with the prosecution history. *See, e.g., Bell Howell Document Mgmt. Prods. Co. v. Altek Sys.*, 132 F.3d 701 (Fed. Cir. 1998). Moreover, claim terms in patents sharing a common specification and application should usually be given the same interpretation. *See, e.g., NTP, Inc. v. Research in Motion, Ltd.,* 418 F.3d 1282, 1293 (Fed. Cir. 2005), *rehearing en banc denied; Microsoft Corp. v. Multi-Tech Sys. Inc.,* 357 F.3d 1340, 1350 (Fed. Cir. 2004), *rehearing en banc denied*. It is improper to confine a claim to a particular embodiment; the claim language itself is paramount. *See, e.g., Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363 (Fed. Cir. 2008).

20.   Extrinsic evidence may also be relevant to claim construction. *See Phillips,* 415 F.3d at 1317. Such evidence consists of all evidence extrinsic to the patent and its prosecution history, including "expert and inventor testimony, dictionaries, and learned treatises." *Id*. (internal quotation omitted). While authorizing examination of extrinsic evidence, the Federal Circuit has warned that, while it "can shed useful light on the relevant art," it is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Id*.

21.   A claim is invalid for indefiniteness only when its language, read in light of the specification and the prosecution history, "fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014). "The definiteness requirement, so understood, mandates clarity, while recognizing that absolute precision is unattainable." *Id*. "The certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter." *Id*. Reasonable certainty" does not require "absolute or mathematical precision." *Id*. "In the face of an allegation of indefiniteness, general principles of claim construction apply." *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1332 (Fed. Cir. 2010) (internal quotation marks and citation omitted). "In that regard, claim construction involves consideration of primarily the intrinsic evidence, viz., the

claim language, the specification, and the prosecution history." *Id.* "The person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Phillips*, 415 F.3d at 1312-13.

        C.   Person of Ordinary Skill in the Art

        22.   I understand that the '122 Patent claims priority to Provisional Application No. 61/138,711, filed on December 18, 2008. I understand that the '088 Patent claims priority as a continuation of the '122 Patent, and that the '901 Patent claims priority as a continuation of the '088 Patent. As such, I understand that the Asserted Patents are each entitled to a priority date no later than December 18, 2008.

        23.   The technical art associated with the Asserted Patents relates to the secure processing of customer account data including the secure interfacing of card issuer databases with client system tools. I understand that LPV has proposed that a person of ordinary skill in the relevant art (POSITA) of the Asserted Patents in late 2008 "would be familiar with the state of the art of e-wallet (digital wallet) technology including cryptography, computer security, and the design of browser interfaces including the storing and securing of sensitive information using secure database storage of encrypted data and encryption keys to provide secure computer transactions." Doc 29 at 4 of 22. I understand such a person would also have a bachelor's degree in computer science, electrical engineering, or a comparable discipline, as well as an advanced degree in such a discipline or equivalent years of industry experience. I also understand that Zoho's Expert, Dr. Jakobsson, has proposed that a POSITA "would have had a bachelor's degree in computer science, computer engineering, or an equivalent, and one or more years of professional experience relating to web technologies, security and encryption, or without said professional

experience, further education relating to those topics." Doc 30-1 at 12-13 of 42. My opinions and

analysis are consistent with and unchanged by either proposal, and as described previously above,

I am qualified to and do provide herein my opinions in the view of a POSITA consistent with the

above noted proposals.

III.   CLAIM CONSTRUCTION ANALYSIS

A.   "securely storing" terms

Term	LPV's Construction	Zoho's Construction
"securely storing the account information at the browser toolbar" '122 Claim 1	Plain and ordinary meaning – no need for construction, or in the alternative: "storing the account information in a data storage implementation wherein the stored account information is securely accessible by the browser toolbar"	Indefinite, or in the alternative: "storing the account information in a data storage implementation wherein the stored account information is accessible only by the browser toolbar"
"securely storing, by the browser toolbar, the account information at the browser toolbar" '901 Claims 1 and 11 '088 Claim 1	Plain and ordinary meaning – no need for construction, or in the alternative: "storing, by the browser toolbar, the account information in a data storage implementation wherein the stored account information is securely accessible by the browser toolbar"	Indefinite, or in the alternative: "storing, by the browser toolbar, the account information in a data storage implementation wherein the stored account information is accessible only by the browser toolbar"

24.   A POSITA would understand the meanings of these "securely storing" terms in the

context of the Asserted Patents and these terms do not require construction. The terms "securely

storing the account information at the browser toolbar" ('122 Claim 1) and "securely storing, by

the browser toolbar, the account information at the browser toolbar" ('901 Claims 1, 11; '088

Claim 1) are not indefinite as alleged by Zoho. Note that the second term differs from the first in

that it adds the additional limitation that the storing is done "by the browser toolbar" such that

these limitations are not identical. *Contrast with* Doc 30-1 at ¶ 46. I understand that in the Joint

Claim Construction Statement (JCCS) in this Case, the parties have agreed that "browser toolbar"

means "a software program that adds functionality to a browser and includes a graphical user

interface component within the browser," making clear that the software program both (1) "adds

functionality to a browser", and (2) "*includes* a graphical user interface component within the

browser." JCCS Doc 32-1 at 1of 7, emphasis added.

25.   Zoho and its expert Dr. Jakobsson argue that the term "at the browser toolbar" is

non-sensical because a POSITA would understand that the "software program" of the agreed upon

construction only consists of executable instructions and not data, thus attempting to narrowly

construe the very "software program" construction agreed upon by the parties. See Doc 30 at 21-23

of 30 and ¶¶ 47-51. But this narrow interpretation is not consistent with the agreed upon

construction because a "software program" construed to consist only of executable instructions

and not transmission or receiving data, would, for example, not be able to meet the agreed upon

construction's own requirement that the software program "includes a graphical user interface

component within the browser."

26.   A POSITA would understand that such a software program with a graphical user

interface would necessarily need to receive, store, act upon, and provide data in order to function.

See JCCS Doc 32-1 at 1 of 7. This is consistent with the specification describing a browser as

receiving data that is then "transmitted to the browser toolbar." Abstract, 2:32-34; 5:49-51; 6:26-

27; 6:60-61; 7:41-43 ("The encrypted data is transmitted to browser toolbar 304, which then

decrypts the data and loads it into e-wallet 302."). Also the term "e-wallet" (one method of secure

storage) is explicitly described as the storage extension of the toolbar software program. *See* '122

Patent at 4:14. A POSITA would understand that adding functionality and a graphical user interface requires data for the added functionality and for the viewing as a user interface. As such, the software program that is the browser toolbar, as agreed by the parties, must also at least include the receiving, storing, acting upon, and providing of data.

27.   The knowledge of a POSITA would include any number of well-known methods of secure storage also consistent with the specification. The Asserted Patents disclose that the browser toolbar resides on a "customer's computer system," and that, at least, "a method and computer readable medium are provided for securely downloading customer data to a browser toolbar." *See*, for example, '122 Patent at column and line numbers 2:18-23, 4:44-63, 5:45-52, and 6:1-6. Indeed, a POSITA would understand that a software program that provides such functionality would do that while residing within and making use of storage / retrieval memory such as RAM for both its instructions as well as at least the data it receives, stores, acts upon, and provides. As an example, the common "software program" Microsoft Word, would not exist as intended on a computer if it could not receive input data from a user and if it could not store that data in its RAM. A POSITA would understand, for example, that computers typically allocate RAM specifically for software programs and that RAM would include space for both the execution of the instructions and data that comprise the software program.

28.   While a POSITA would understand "securely storing, [by the browser toolbar,] the account information at the browser toolbar," making use of its plain and ordinary meaning alone as I have explained above, it is also the case that the specifications of the Asserted Patents describe storing account information at a browser toolbar, contrary to Dr. Jakobsson's assertion. While the exemplary embodiment discussed may show a secure e-wallet separately from a browser toolbar, the specification expressly discloses embodiments whereby a secure e-wallet is integrated within

the browser toolbar. '122 Patent Col. 4:14-16.

29.   Furthermore, in the prosecution history of the '122, under the "Reasons for Allowance" section the examiner states:

> "The pending application solves this problem by generating an encryption key by the e-wallet (i.e., the browser toolbar), such that when a request is made by the browser toolbar for account information, the account information is encrypted at a transaction account issuer/bank system using the encryption key provided by the e-wallet."

'122 Prosecution History, February 8, 2016, Notice of Allowance at 8. This indicates to a POSITA that the examiner also understood the e-wallet to be incorporated into the browser.

30.   Dr. Jakobsson cites to the file history, but the Patentee's statements do not imply that the secure e-wallet cannot be within the browser toolbar. *See, e.g.,* Doc 30-1 at ¶ 49 citing to '122 File History at March 2, 2015 Office Action Response at 12. The cited passages merely state that the "encryption key is maintained by the browser toolbar" and that prior art e-wallets "might store encrypted data, but leave the key exposed." *Id.* To the contrary, a POSITA would understand from these passages that an e-wallet within the browser toolbar would keep the key secure. *Id.*

31.   As an additional argument, Zoho and Dr. Jakobsson allege that a POSITA would not understand the scope of the term "securely" because whether something is "secure" is a matter of degree and that the Asserted Patents allegedly do not cure this supposed confusion. *See, e.g.,* Doc 30 at 25 of 30 and Doc 30-1 at ¶¶52-57. I disagree. I first note that Zoho and Dr. Jakobsson do not allege that other terms using the word "secure", such as the "secure database" or "secure datastore" terms of these claims are indefinite, and they are not. *See* '122 Claim 1, '901 Claims 1, 11, and '088 Claim 1. This may be at least a tacit recognition that the term "secure", even if it were merely a term of degree (which it is not), does not in and of itself render terms indefinite.

32.   A POSITA, in the context of the specifications and claims of the Asserted Patents,

would understand that "securely storing the account information" at the browser means that the account information is downloaded to the browser toolbar securely where it has restricted availability at the customer's computer generally, or otherwise include any measure taken to limit access to the data. *See* '122 Claim 1, '901 Claims 1, 11, and '088 Claim 1. The toolbar provides for securely storing at least by limiting where, and how long, information is maintained. *Id.*

33.   Furthermore, dependent claims of the Asserted Patents provide additional examples of the "storing securely" limitation, for example, by limiting the amount of time the information is maintained. For example, '088 Claim 3 reads, "wherein [the] securely storing further includes, after providing the account information to the web service, deleting the stored account information from the browser toolbar." *See, e.g.,* '901 Claims 6 and 16. A POSITA would understand that this deleting of the decrypted version of the account information from the browser toolbar when it is no longer needed serves to minimize the time it exists in unencrypted form, thus also providing for securely storing.

34.   Should the Court decide to construe these terms, a POSITA would understand that "*securely* storing[, by the browser toolbar,] the account information *at the browser toolbar*" means "storing[, by the browser toolbar,] the account information *in a data storage implementation wherein the stored account information is securely accessible by the browser toolbar*," such that it is the method of accessibly storing [, by the browser toolbar,] that is secured for secure access by the browser toolbar as proposed by LPV. *See* JCCS, Doc 32-1 at 3-4 of 7 (emphasis added). Making use of the construction for "browser toolbar" LPV's proposed construction reads, "storing [, by the browser toolbar,] the account information in a data storage implementation wherein the stored account information is securely accessible by the 'software program that adds functionality to a browser and includes a graphical user interface component within the browser'," such that it

is the method of storing [, by the browser toolbar,] that is secured for secure access by the "software program that adds functionality to a browser and includes a graphical user interface component within the browser." *Id.*

35.   While arguing that these "securely storing" terms are indefinite, Zoho also stated in the JCCS that a POSITA would understand the terms to mean "storing [, by the browser toolbar,] the account information in a data storage implementation wherein *the stored account information is accessible only by the browser toolbar*." *See* JCCS, Doc 32-1 at 4-5 of 7 (emphasis added). However, neither Zoho's brief nor Dr. Jakobsson's declaration make any argument in support of including the additional limitation of "the stored account information is accessible only by the browser toolbar." See Doc 30 at 20-27 of 30 and Doc 30-1 at ¶¶ 46-58. I see no justification for re-writing the claim limitations in this way. For example, only '122 Claim 1 has a limitation in its decrypting step where an *encryption key* is "inaccessible outside of the browser toolbar." *See* '0122 Claim 1. Such a limitation regarding the encryption key is not found within '901 Claims 1 and 11 or '088 Claim 1. *See* '901 Claims 1 and 11, and '088 Claim 1.

36.   In summary and for the reasons explained above, the terms, "*securely* storing [, by the browser toolbar,] the account information at the browser toolbar," are not indefinite. It is my opinion that a POSITA would have a reasonable certainty as to the scope of the claimed invention. Additionally, should the Court decide to construe these terms, a POSITA would understand that the terms mean "storing[, by the browser toolbar,] the account information in a data storage implementation wherein the stored account information is securely accessible by the browser toolbar," such that it is the method of accessibly storing [, by the browser toolbar,] that is secured for secure access by the browser toolbar (emphasis added).

B.   "[via the]/[at a/the] browser toolbar" terms

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Term	LPV's Construction	Zohos' Construction
"generating, via the browser toolbar" '122 Claim 7	Plain and ordinary meaning – no need for construction	Indefinite
"generating, at a browser toolbar" '901 Claims 1, 11 '088 Claim 1	Plain and ordinary meaning – no need for construction	Indefinite
"determining, at a browser toolbar" '122 Claim 15 '088 Claim 15	Plain and ordinary meaning – no need for construction	Indefinite
"decrypting, at the browser toolbar" '122 Claim 15	Plain and ordinary meaning – no need for construction	Indefinite
"providing, via the browser toolbar, the stored account information to the web service" '122 Claim 6	Plain and ordinary meaning – no need for construction	Indefinite

36.   A POSITA would understand the meanings of these "[via the]/[at a/the] browser toolbar" terms in the context of the Asserted Patents and these terms do not require construction. The terms "generating, via the browser toolbar" ('122 Claim 7), "generating, at a browser toolbar" ('901 Claims 1, 11, and '088 Claim 1), "determining, at a browser toolbar" ('122 Claim 15 and '088 Claim 15), "decrypting, at the browser toolbar" ('122 Claim 15), and "providing, via the browser toolbar, the stored account information to the web service" ('122 Claim 6) are not indefinite as alleged by Zoho. I understand that in the Joint Claim Construction Statement (JCCS) in this Case, the parties have agreed that "browser toolbar" means "a software program that adds functionality to a browser and includes a graphical user interface component within the browser," making clear that the software program both (1) "adds functionality to a browser", and (2)

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"*includes* a graphical user interface component within the browser." JCCS Doc 32-1 at 1of 7, emphasis added. The terms "by the browser tool bar" and "at the browser toolbar" were part of the two terms I discussed in the previous section above. The terms of this section, "[via the]/[at a/the] browser toolbar" are not indefinite at least for the same reasons of the previous section and thus I incorporate that discussion herein by reference.

37.   Dr. Jakobsson makes a vague reference to the "doctrine of claim differentiation" but does not explain how it is relevant to his indefiniteness argument regarding "via" or "at". Indeed, terms, limitations, and related claims are in fact different. *See, e.g.,* Doc 30-1 at ¶60. Three of the terms separately claim "determining" ('122 Claim 15 and '088 Claim 15), "decrypting" ('122 Claim 15) and "providing" ('122 Claim 6) and thus are clearly different. The meaning of the terms "generating, via the browser toolbar" ('122 Claim 7) and "generating, at a browser toolbar" ('901 Claims 1, 11, and '088 Claim 1) are also readily ascertainable despite using "via the" in the first case and "at a" in the latter. Furthermore, comparing each of the claims of each of these terms with each other show that the claims have a different collection of limitations and thus have differing scope.

38.   Dr. Jakobsson admits that he understands the meaning of "by the browser toolbar," but alleges that "at the browser toolbar" must have a different meaning. This is incorrect, and inconsistent with Dr. Jakobsson's own stated understanding of the law where "a patent will be held invalid for indefiniteness if its claims, viewed in light of the specification and prosecution history, fail to inform with reasonable certainty those skilled in the art about the scope of the invention." *See, e.g.,* Doc 30-1 at ¶41. Yet, Dr. Jakobsson offers no additional explanation as to why "decrypting, at the browser toolbar" is allegedly ambiguous. It is not. The plain claim language indicates, as a POSITA would also understand, that the decrypting is performed at the browser

toolbar as opposed to being performed somewhere else. Similarly, Dr. Jakobsson alleges without further justification that a POSITA would be unclear regarding the meaning of "generating [a key], via the browser toolbar. It is not. The plain claim language indicates, as a POSITA would also understand, that the generating is performed via the browser toolbar as opposed to being performed by way of some other part of the system.

39.   There is no ambiguity because the claim language itself is clear and thus the meaning within the claims are at least reasonably ascertainable by a POSITA. Therefore, a POSITA would understand the meaning of the terms and they are not indefinite. In summary and for the reasons explained above the terms "generating, via the browser toolbar" ('122 Claim 7), "generating, at a browser toolbar" ('901 Claims 1, 11, and '088 Claim 1), "determining, at a browser toolbar" ('122 Claim 15 and '088 Claim 15), "decrypting, at the browser toolbar" ('122 Claim 15), and "providing, via the browser toolbar, the stored account information to the web service" ('122 Claim 6) are not indefinite. It is my opinion that a POSITA would have a reasonable certainty as to the scope of the claimed invention.

C.   "encryption key" and "cryptographic key" terms

Term	LPV's Construction	Zoho's Construction
"encryption key" '122 Claims 1, 7, 15	Plain and ordinary meaning – no need for construction.	"a private key that corresponds to a public key"
"cryptographic key" '901 Claims 1, 4, 11, 14 '088 Claims 1, 15	Plain and ordinary meaning – no need for construction.	"a private key that corresponds to a public key"

39.   Zoho, through its proposed constructions, attempts to import limitations of dependent claims into the independent claims, contrary to the understanding of a POSITA. *See, e.g.,* Doc 30 at 14-17 of 30. I see no reason, based on the intrinsic evidence, that a POSITA would need to import limitations beyond the terms' plain and ordinary meaning. Zoho supports its

argument with opinion provided in Dr. Jakobsson's Declaration with respect to the background of encryption technology.   *See Id.* (*citing* Doc. 30-1, ¶¶ 27-32 of Dr. Jakobsson's declaration).   In this respect, Dr. Jakobsson's opinion confirms that the terms "cryptographic key" and "encryption key" do not require further construction.

40.   Dr. Jakobsson correctly states that there are two basic types of encryption methods: symmetric and asymmetric. Doc. 30-1, ¶ 27. Since the ordinary meaning of the terms "encryption key" and "cryptographic key" are included in both types of encryption, a POSITA would understand the plain meaning of the terms in the context of the Asserted Patents, and nothing in the patents would change that understanding. Indeed, these terms are even common in current ordinary use (i.e., the term "encryption key" being understood as a key used to, at least, encrypt information and "cryptographic key" being a broader term including "encryption key").

41.   A POSITA would be familiar with the two basic encryption methods used for data exchange making use of encryption keys, and know that these are asymmetric and symmetric encryption, where asymmetric encryption has a much shorter history (many decades) than symmetric encryption (many centuries). As such, a POSITA would know that symmetric encryption uses private keys to encrypt and decrypt data whereas asymmetric encryption makes use of a public key and that both encryptions methods would be common knowledge to a POSITA. A POSITA would understand that asymmetric and symmetric encryption are not generally mutually exclusive such that, for example, a symmetric encryption key can be generated and securely exchanged between parties using an asymmetric encryption key, and then used to encrypt the actual transaction data. The Asserted Patents do not teach away from this basic understanding of a POSITA concerning the option of using either asymmetric or symmetric keys for encryption, which would be well-known to a POSITA, even if the exemplary embodiments and related

descriptions use asymmetric private/public keys. A POSITA would understand that private/private keys would also encrypt and decrypt data consistently with the claimed invention.

42.   For example, for decrypting received encrypted data, '122 Claim 1 requires "using an encryption key maintained by the browser toolbar and inaccessible outside of the browser toolbar," whereas '122 Patent dependent Claim 7 adds the additional limitation that requires "generating, via the browser toolbar, an encryption key pair, wherein the encryption key pair includes a public encryption key that corresponds to the encryption key." *See, e.g.,* '122 Patent Claims 1 and 7. While Claim 7 requires that an "encryption key pair includes a public encryption key," Claim 1 does not require this. Instead, Claim 1, a method claim, requires that the "decrypting is performed using an encryption key maintained by the browser toolbar and inaccessible outside of the browser toolbar."

43.   A POSITA would understand, for example, that symmetric keys could be used instead and that such need not make use of a public key, where the key encrypting the received and already encrypted data was inaccessible outside of the browser toolbar because it was not an identical key (*e.g.,* a transform) or the key was previously removed after use (*e.g.,* as in '122 Claim 18). These same arguments also apply for '122 Claim 15, except that Claim 15 does not have the requirement that a key for the encrypted data be inaccessible outside of the browser toolbar. These same arguments also apply for the "cryptographic key" claims of the '901 and the '088.

44.   Accordingly, a POSITA would understand the meaning of the terms "encryption key" and "cryptographic key" in the context of the Asserted Patents, these terms do not require construction, and their meanings should not be narrowed so as to improperly reduce the scope of the independent claim limitations they are found in.

45.   I reserve the right to modify and supplement my opinions in the future to respond

to new arguments raised and to take into account new information as it becomes available to me.

46.   I hereby declare all statements made herein of my own knowledge are true and that

all statements made on information and belief are believed to be true.

Dated: February 7, 2022   Jose Luis Melendez

DR. JOSE LUIS MELENDEZ

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BIOGRAPHICAL DATA

Birthdate: October 22, 1968

Birthplace: Fort Dix, United States Army Installation, New Jersey

Citizenship: United States of America

Personal: Married with Children

EDUCATION

Doctor of Philosophy in Electrical Engineering from Stanford University (January 6, 1994) with a Grade Point Average of 4.0/4.0.

Master of Science in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology (February 20, 1991) with a Grade Point Average of 4.8/5.0.

Bachelor of Science in Electrical Engineering from the Massachusetts Institute of Technology (June 4, 1990) with a Grade Point Average of 5.0/5.0.

PROFESSIONAL CONSULTING AND INTERESTS (Alphabetical Order)

Computer Networking

Data Visualization

Document Management and Control

E-Commerce

Imaging Devices and Systems

Integrated Photonic Circuit Subsystems

Internet

Mobile Cellular Systems and Devices

Mobile Computing

Micro-Electro Mechanical Systems (MEMS)

Local Area Networks (e.g. WiFi)

Nanotechnology

Optical Systems

Personal Area Networks (e.g. Bluetooth)

Perspective Science (Judgement and Decision Making/Artificial Intelligence)

Radio Frequency Collision Avoidance

Remote Systems Management

Semiconductor Devices and Manufacturing

Solid State Lighting Subsystems

Spectroscopic Analysis and Measurement

Voice Over Internet Systems

Wireless Systems, Devices, and Standards

Cases (5 Years) on behalf of party indicated in bold.
Retained for reports on infringement/non-infringement, validity/invalidity, declarations, testimony at depositions, and/or tutorials:

Via Vadis, LLC et al. v. Amazon.com, Inc.   WDTX
      1-14-cv-813   2020

Via Vadis, LLC et al. v. Blizzard Entertainment, Inc.,   WDTX
      1-14-cv-810   2020

Appliance Computing III, Inc. v. Redfin Corporation   WDTX
      6-20-cv-00376   2020

Human Differential Intelligence LLC v. CVS Health Corp.   WDTX
      6-20-cv-00311   2020

Human Differential Intelligence LLC v. Bed Bath & Beyond WDTX
      6-20-cv-00310   2020

Human Differential Intelligence LLC v. The Gap, Inc.   WDTX
      6-20-cv-00307   2020

Human Differential Intelligence LLC v. Cigna Corporation   WDTX
      6-20-cv-00305   2020

Monument Peak Ventures, LLC v. Hitachi Kokusai Electric   EDTX
      2-20-cv-00098   2020

Verizon Business Network Services v. **Huawei Technologies**   EDTX
      2:20-cv-00030   2020

Huawei Technologies v. Verizon Communications Inc.   EDTX
      2:20-cv-00030   2020

Bandspeed LLC v. Cypress Semiconductor Corporation   WDTX
      1-19-cv-00936   2019

Bandspeed, LLC v. Curtis International Ltd.   WDTX
      1-19-cv-00225   2019

Infinity Computer, Inc. v. Epson America, Inc.   CDCA
      2-18-cv-02532   2018

Infinity Computer, Inc. v. OKI Data Americas, Inc.   DED
      1-18-cv-00463   2018

Parity Networks, LLC v. Zyxel Communications, Inc.   CDCA
      8:20-cv-00697   2020

Parity Networks, LLC v. Moxa Inc. et. al.   CDCA
      8:20-cv-00698   2020

Parity Networks, LLC v. Edgecore USA Corporation   CDCA
        8:20-cv-00697   2020

Parity Networks, LLC v. D-Link Corporations   WDTX
        6:20-cv-00093   2020

Parity Networks, LLC v. Ericsson Inc.   EDTX
        6-17-cv-00526   2017

Parity Networks, LLC v. Juniper Networks, Inc.   EDTX
        6-17-cv-00495   2017

Parity Networks, LLC v. Hewlett Packard   EDTX
        6-17-cv-00683   2017

Bandspeed, LLC v. NXP Semiconductors USA, Inc. et al   WDTX
        1-18-cv-01015   2018

Bandspeed, LLC v. Silicon Laboratories, Inc.   WDTX
        1-18-cv-00518   2018

Bandspeed, LLC v. Microchip Technology Inc.   WDTX
        1-18-cv-00519   2018

INTER PARTES REVIEW

Have provided expert declarations and/or testimony at depositions.

Represented Party: Bytemark, Inc.

Petitioner: Xerox Corp., ACS Transport Solutions, Inc., et al. IPR2022-00621

Represented Party: Rembrandt Wireless Technologies, LP

Petitioner: Qualcomm Incorporated   IPR2020-00510
Petitioner: Qualcomm Incorporated   IPR2020-00509

Represented Party: Mimzi, LLC

Petitioner: Microsoft Corporation, Google LLC, et. al.   IPR2019-01516
Petitioner: Foursquare Labs, Inc.   IPR2019-01287
Petitioner: Tripadvisor, LLC   IPR2019-01080

Represented Party: KOM Software, Inc.

Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00608
Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00607
Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00606

Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00605
Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00604
Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00603
Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00601
Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00600
Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00598
Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00597
Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00594
Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00592
Petitioner: NetApp, Inc.; HP Enterprise Company   IPR2019-00591

Represented Party: Parity Networks, LLC
Petitioner: Juniper Networks, Inc.   IPR2018-01587
Petitioner: Juniper Networks, Inc.   IPR2018-01590
Petitioner: Juniper Networks, Inc.   IPR2018-01623
Petitioner: Juniper Networks, Inc.   IPR2018-01635
Petitioner: Juniper Networks, Inc.   IPR2018-01644
Petitioner: RPX Corporation et al   IPR2018-00099
Petitioner: RPX Corporation et al   IPR2018-00100

Represented Party: Bandspeed, Inc.
Petitioner: Qualcomm Incorporated   IPR2016-00620
Petitioner: Qualcomm Incorporated   IPR2016-00623

WORK EXPERIENCE

2018–Present: Professor, Department of Computer Science and Engineering, University of Puerto Rico at Mayagüez

2018-Present: DRMTES LLC (Expert Consulting Services)

2019-2022: Special Assistant of Chancellor, University of Puerto Rico Mayagüez

2015-2022: DRMArts LLC, Managing Member (Artistic Endeavors)

2010-2022: Chief Executive Officer, Patent Calls, Inc. (Analytics)

2002-2018: Professional Consulting (Technology)

2013-2014: Patentiquity, Inc. (Patent Analytics)

2009-2013: Founder & Chief Scientist, Spectral MD, Inc. (publicly traded company - medical imaging systems)

2007-2011:   Board Director, Sand 9, Inc. (Nanotechnology)

2002-2007:   Co-Founder and Executive, Commoca Inc., (smart phones, applications, networks, and services).

2001-2002: General Manager, Wireless Infrastructure, Texas Instruments, Inc. (wireless infrastructure systems, devices and software)

1999-2001:   General Manager, Optical Products, High Performance Analog, Texas Instruments, Inc. (wireless communications, sensors, storage, and micro-electromechanical systems)

1997-2000: Affiliate Professor, Department of Electrical Engineering and Computer Science, University of Washington.

1997-1999: Director/Department Manager, Microcomponents Technology Center, Texas Instruments, Inc. (semiconductor devices, sensors and manufacturing).

1988-1996:   Branch Manager / Member Technical Staff / Intern, Sensor and Infrared Laboratory, Central Research Laboratory, Texas Instruments, Inc. (sensors, devices, process development).

1987: Intern – Data Center, Honeywell Electro-Optics Division, Massachusetts.

PATENTS ISSUED – NAMED INVENTOR

US 8,838,211 Multi-wavelength diagnostic imager

US 8,606,344 Integrated Patient Bed System

US 7,203,425 Optical wireless link

US 7,035,546 Optical wireless multiport hub

US 6,813,446 System for acquiring and maintaining reliable optical wireless links

US 6,752,962 Miniaturized integrated sensor platform

US 6,714,336 Packaged micromirror assembly with in-package mirror position feedback

US 6,692,697 Versatile flow cell front-end for optically-based integrated sensors

US 6,690,888 Method for establishing and maintaining optical, open-air communications link

US 6,657,832 Mechanically assisted restoring force support for micromachined membranes

US 6,635,919 High Q large tuning range Micro-Electro Mechanical System (MEMS) varactor for broadband applications

US 6,525,396 Selection of materials and dimensions for a micro-electromechanical switch for use in the RF regime

US 6,415,235 Fixed optic sensor system and distributed sensor network

US 6,376,787 Microelectromechanical switch with fixed metal electrode/dielectric interface with a protective cap layer

US 6,374,845 System and method for sensing and controlling beverage quality

US 6,326,612 System and method for optical sensing utilizing portable, detachable sensor cartridge

US 6,326,210 Method of making and connecting a miniaturized integrated sensor

US 6,191,847 Fixed optic sensor system and distributed sensor network

US 6,183,696 Optically based miniaturized sensor with integrated fluidics

US 6,111,652 High throughput surface plasmon resonance analysis system

US 6,111,248 Self-contained optical sensor system

US 6,097,479 Critical angle sensor

US 6,045,756 Miniaturized integrated sensor platform

US 6,024,923 Integrated fluorescence-based biochemical sensor

US 5,946,083 Fixed optic sensor system and distributed sensor network

US 5,922,285 Integrated fluorescence-based biochemical sensor

US 5,912,456 Integrally formed surface plasmon resonance sensor

US 5,898,503 Surface plasmon resonance sensor with interchangeable optical element

PUBLICATIONS/PRESENTATIONS – Named Author

"Software Platform Requirements for Emotion Experience Inclusion Architectures in Artificial Intelligence." Society for Affective Science Annual Conference. Boston, MA. March 2019.

"Modeling Human Perspective in Artificial Intelligence Computing Systems." Society for Affective Science Annual Conference. Boston, MA. March 2019.

"Deep-tissue optical imaging of decubitus ulcers", (contributor) Proc. SPIE 7890, 78900P, January 2011.

 "Deep Tissue Dynamic Monitoring of Decubitus Ulcers: Wound Care and Assessment", (contributor), IEEE Engineering in Medicine and Biology Magazine, March-April 2010.

"Detection of Staphlococcus Aureus Enterotoxin B at Femtomolar Levels with a Miniature Integrated Two-Channel Surface Plasmon Resonance (SPR) Sensor", (contributor) Biosensors and Bioelectronics 17, 2002.

"Integrated Analytical Sensors: The Use of the TISPR-1 as a Biosensor", (contributor) Sensors and Actuators-B, 1999.

"Integrated Fault Detection Capability for Spreeta Biosensors", (contributor), International Society for Optical Engineering, 1999.

"Construction of Surface Plasmon Resonance Biosensors using a Gold-Binding Polypeptide and a Miniature Integrated Sensor", (contributor), Biosensors and Bioelectrics 13, 1998.

"Detection of Polynitroaromatic Compound Using a Novel Polymer-Based Multiplate Sensor", (contributor), The International Society for Optical Engineering, 1998.

"Development of a Surface Plasmon Resonance Senor for Commercial Applications", (contributor), Sensors and Actuators-B, 1997.

"Fundamental System for Biosensor Characterization: Application to Surface Plsmon Resonance (SPR)", (contributor), The International Society for Optical Engineering, 1996.

"A Commercial Solution for Surface Plasmon Sensing", (contributor), Sensors and Actuators-B, 1996.

"Compositional Dependence of Cation impurity Gettering in Hg1-xCdxTe", (contributor), Journal of Electronic Materials, Volume 24, Issue 9, 1995.

"Process Simulation for HgCdTe Infrared Focal Plane Array Flexible Manufacturing", (contributor), Journal of Electronic Materials, Volume 24, Issue 9, 1995.

"Part II: Self-Diffusing, Interdiffusion, and fundamental Mechanisms of Point-Defect Interactions in Hg1-xCdxTe", (contributor), Journal of Electronic Materials, Volume 24, Issue 5, 1995.

"Part I: Status of Stanford University Mercury Cadmiumtelluride Process Simulator", (contributor), Journal of Electronic Materials, Volume 24, Issue 5, 1995.

"Cation Impurity Interaction in Hg1-xCdxTe", (contributor), The International Society for Optical Engineering, 1994.

"Wet Chemical Cleaning and Surface Analysis of ZnSe", (contributor), Journal of the Electrochemical Society, Vol. 141, No. 7, 1994.

"Process Models and Simulation for Mercury Cadmium Telluride", (author), Stanford University, 1994.

"Process Modeling of Point Defect Effects in Hg1-xCdxTe", (contributor), Journal of Electronic Materials, Volume 22, Issue 8, 1993.

"The Roll of the Insulator in Determining 1/f Noise in Hg1-xCdxTe Integrating MIS Devices", (contributor), Journal of Electronic Materials, Volume 22, Issue 8, 1993.

PROFESSIONAL AND HONORARY SOCIETY MEMBERSHIPS

Association for the Advancement of Artificial Intelligence, 2018

Austin Intellectual Property Law Association, 2010-2015

Member, IEEE Engineering in Medicine and Biology Society, 2008-2009

Chairman, Texas Instruments Hispanic Employees Initiative Forum, 2001-2002

Member, Society of Photo-Optical Instrumentation Engineers (former)

Society of Hispanic Professional Engineers (former)

OTHER HONORS

Panelist, Taking your Expertise Beyond the Job, IP Summit, SHPE National Convention, 2020.

Moderator, Intellectual Property Panel, Hispanic National Bar Association National Conference, Dallas, Texas, 2011

Moderator, Non Practicing Entity Panel, TechNet IP Forum, New York, New York, 2010

Invited Speaker: "Increasing Developing Countries' Local and International Investments in Innovative Technologies", Association of University Technology Managers, San Juan, Puerto Rico, June 2009

Wireless Design and Development Technology Award – 100Mbps Wireless Reference Design

HISPANIC BUSINESS® Magazine: Youngest person named to Hispanic Corporate Elite featuring Hispanic executives from Fortune 500 companies

Electronics Design Magazine – 1999 New Product of Year - Spreeta®

Popular Science® Cover Story – June 1998 – TI Sensors

Luminary Panelist - Electronic Design Automation's Executive Business Forum 2000

Forbes, May 28, 2001, p. 89, "...Jose Meléndez...helping TI move up to the next generation."

USA Today, February 16, 1998, Cover of Business Section, "Hot Tech …"

Hispanic Engineering National Achievement Award for Most Promising Scientist of 1997

National Science Foundation Fellow

Stanford Center for Integrated Systems Fellow

CIVIC ACTIVITIES

Sponsor of Perspectivas Globales, 2019-Present

School Board Trustee, Texas CAN! Academy, 2009-2012

Board Member, Puerto Rico Research and Commercialization Alliance, 2004-2005